

1 1. (Previously amended) A method of fabricating an electronic device, comprising  
2 the steps of:

3 a) providing a coil of conductor and an insulation, said coil of  
4 conductor having a coil outer surface, said insulation on said coil  
5 outer surface;

6 b) forming openings in portions of said insulation on said coil outer  
7 surface and exposing conductor in said openings for external  
8 contacts; and

9 c) dicing completely through said coil to provide a plurality of short  
10 coils, wherein each said short coil has at least one said opening in  
11 said insulation.

1 2. (Previously amended) The method as recited in claim 74, wherein said providing  
2 step (a) comprises the step of providing a tube and a wire, and winding said wire  
3 around said tube.

1 3. (Previously amended) The method as recited in claim 2, wherein, in said  
2 providing step (a), said wire comprises two ends, wherein neither of said ends  
3 extends from said coil for contacting.

1        4.        (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 1, further comprising the steps of:

3  
4                    e)        providing a substrate; and

5  
6                    f)        surface mounting said coil to said substrate.

1        5.        (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 4, wherein, in said providing step (e), said substrate comprises a printed  
3                    circuit board, a ceramic substrate, a flexible material, or an integrated circuit.

1        6.        (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 4, wherein said surface mounting step (f) comprises the step of  
3                    electrically connecting conductor exposed in said opening in said insulation to  
4                    said substrate.

1        7.        (Original and withdrawn from consideration) The method as recited in claim 6,  
2                    further comprising the step of providing a solder or conductive polymer, wherein  
3                    said electrical connecting step comprises joining with said solder or said  
4                    conductive polymer.

1        8.        (Original and withdrawn from consideration) The method as recited in claim 7,  
2                    wherein said joining step comprises providing solder paste between said  
3                    substrate and said conductor exposed in said window and heating to reflow said  
4                    solder.

- 1      9.      (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 4, further comprising the step of mounting additional electronics on said  
3                    substrate.
- 1      10.     (Original and withdrawn from consideration) The method as recited in claim 9,  
2                    further comprising the step of connecting said additional electronics to said coil.
- 1      11.     (Original and withdrawn from consideration) The method as recited in claim 10,  
2                    further comprising the step of providing a housing for holding said coil, said  
3                    substrate, and said additional electronics.
- 1      12.     (Original and withdrawn from consideration) The method as recited in claim 11,  
2                    further comprising the step of hermetically sealing said housing.
- 1      13.     (Original and withdrawn from consideration) The method as recited in claim 11,  
2                    further comprising the step of providing pins for external connection through said  
3                    housing.
- 1      14.     (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 11, wherein said coil and said additional electronics comprise a sensor.
- 1      15.     (Original and withdrawn from consideration) The method as recited in claim 14,  
2                    wherein said sensor comprises a variable reluctance transducer.
- 1      16.     (Original and withdrawn from consideration) The method as recited in claim 14,  
2                    wherein said sensor is for measuring strain, displacement, acceleration, force, or  
3                    pressure.

1 17. (Original and withdrawn from consideration) The method as recited in claim 14,  
2 further comprising the step of providing a circuit to correct for temperature  
3 variation.

1 18. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 17, wherein said circuit is integrated within said housing.

1 19. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 17, wherein said circuit is located within signal conditioning electronics  
3 separate from said housing.

4  
5 20. (Original and withdrawn from consideration) The method as recited in claim 9,  
6 wherein said additional electronics provides excitation or synchronous  
7 demodulation.

1 21. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 9, wherein said additional electronics converts an ac waveform to a dc  
3 voltage.

1 22. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 1, further comprising the step of enclosing said coil in a housing and  
3 hermetically sealing said housing.

1 23. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 1, wherein said step of forming openings in portions of said insulation  
3 comprises laser ablating said insulation.

- 1      24.      (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 23, wherein said step of laser ablating said insulation, comprises  
3                    directing light from a laser on said insulation.
- 1      25.      (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 23, wherein said coil comprises a plurality of turns of said wire and  
3                    wherein said step of laser ablating said insulation comprises opening said  
4                    insulation over a plurality of said turns of wire.
- 1      26.      (Previously amended and withdrawn from consideration) The method as recited  
2                    in claim 23, wherein said step of laser ablating said insulation comprises ablating  
3                    a ring shaped opening in said insulation.
- 1      27.      (Original) The method as recited in claim 1, wherein said insulation comprises  
2                    polyimide.
- 1      28.      (Previously amended) The method as recited in claim 75, further comprising the  
2                    step of providing a structure for holding position of said core within said tube.
- 1      29.      (Previously amended) The method as recited in claim 28, further comprising the  
2                    step of providing a structure for resetting position of said core within said tube.
- 1      30.      (Previously amended) The method as recited in claim 29, wherein said structure  
2                    for resetting position of said core within said tube comprises an electronically  
3                    controllable clamp.
- 1      31.      (Original) The method as recited in claim 30, wherein said electronically  
2                    controllable clamp comprises a shape memory alloy.

1 32. (Previously amended) The method as recited in claim 29, wherein said structure  
2 for resetting position of said core further comprises a spring so said core can snap  
3 to a new position when said clamp is released.

1 72. (Previously added) The method as recited in claim 1, wherein said step of  
2 forming openings in portions of said insulation comprises abrading said  
3 insulation.

1 73. (Previously added and withdrawn from consideration) The method as recited in  
2 claim 1, wherein said step of forming openings in portions of said insulation  
3 comprises chemically etching said insulation.

1 74. (Previously added) The method as recited in claim 1, wherein said providing step  
2 (a) comprises providing said coil of conductor and said insulation on a tube.

1 75. (Previously added) The method as recited in claim 74, further comprising the  
2 step of providing a movable core within said tube for adjusting inductance of said  
3 coil.

1 76. (Previously added) The method as recited in claim 75, further comprising the  
2 steps of:

3  
4 e) providing a substrate; and

5  
6 f) surface mounting said coil to said substrate.

- 1      77.      (Previously added) The method as recited in claim 76, wherein, in said providing  
2                      step (e), said substrate comprises a printed circuit board, a ceramic substrate, a  
3                      flexible material, or an integrated circuit.
- 1      78.      (Previously added) The method as recited in claim 76, wherein said surface  
2                      mounting step (f) comprises the step of electrically connecting conductor  
3                      exposed in said opening in said insulation to said substrate.
- 1      79.      (Previously added) The method as recited in claim 78, further comprising the  
2                      step of providing a solder or conductive polymer, wherein said electrical  
3                      connecting step comprises joining with said solder or said conductive polymer.
- 1      80.      (Previously added) The method as recited in claim 79, wherein said joining step  
2                      comprises providing solder paste between said substrate and said conductor  
3                      exposed in said window and heating to reflow said solder.
- 1      81.      (Previously added) The method as recited in claim 76, further comprising the  
2                      step of mounting additional electronics on said substrate.
- 1      82.      (Previously added) The method as recited in claim 81, further comprising the  
2                      step of connecting said additional electronics to said coil.
- 1      83.      (Previously added) The method as recited in claim 82, further comprising the  
2                      step of providing a housing for holding said coil, said substrate, and said  
3                      additional electronics.
- 1      84.      (Previously added) The method as recited in claim 83, further comprising the  
2                      step of hermetically sealing said housing.

- 1 85. (Previously added) The method as recited in claim 83, further comprising the  
2 step of providing pins for external connection through said housing.
- 1 86. (Previously added) The method as recited in claim 83, wherein said coil and said  
2 additional electronics comprise a sensor.
- 1 87. (Previously added) The method as recited in claim 86, wherein said sensor  
2 comprises a variable reluctance transducer.
- 1 88. (Previously added) The method as recited in claim 86, wherein said sensor is for  
2 measuring strain, displacement, acceleration, force, or pressure.
- 1 89. (Previously added) The method as recited in claim 86, further comprising the  
2 step of providing a circuit to correct for temperature variation.
- 1 90. (Previously added) The method as recited in claim 89, wherein said circuit is  
2 integrated within said housing.
- 1 91. (Previously added) The method as recited in claim 89, wherein said circuit is  
2 located within signal conditioning electronics separate from said housing.
- 1 92. (Previously added) The method as recited in claim 81, wherein said additional  
2 electronics provides excitation or synchronous demodulation.
- 1 93. (Previously added) The method as recited in claim 81, wherein said additional  
2 electronics converts an ac waveform to a dc voltage.



- 1 94. (Previously added) The method as recited in claim 75, further comprising the  
2 step of enclosing said coil in a housing and hermetically sealing said housing.
- 1 95. (Previously added) The method as recited in claim 75, wherein said step of  
2 forming openings in portions of said insulation comprises laser ablating said  
3 insulation.
- 1 96. (Previously added) The method as recited in claim 95, wherein said step of laser  
2 ablating said insulation, comprises directing light from a laser on said insulation.
- 1 97. (Previously added) The method as recited in claim 96, wherein said laser  
2 comprises an excimer laser.
- 1 98. (Previously added) The method as recited in claim 95, wherein said coil  
2 comprises a plurality of turns of said wire and wherein said step of laser ablating  
3 said insulation comprises opening said insulation over a plurality of said turns of  
4 wire.
- 1 99. (Previously added) The method as recited in claim 95, wherein said step of laser  
2 ablating said insulation comprises ablating a ring shaped opening in said  
3 insulation.
- 1 100. (Previously added) The method as recited in claim 2, wherein said wire  
2 comprises an insulated wire and said step (a) comprises winding said insulated  
3 wire around said tube.
- 1 101. (Previously added and withdrawn from consideration) The method as recited in  
2 claim 24, wherein said laser comprises an excimer laser.

1        102.    (Previously amended) A method of fabricating an electronic device, comprising  
2                    in order, the steps of:

3                    a)     providing a coil of conductor and an insulation, said coil of  
4                                conductor having a coil outer surface, said insulation on said coil  
5                                outer surface;

6                    b)     forming openings in portions of said insulation on said coil outer  
7                                surface and exposing conductor in said openings of said coil for  
8                                external contacts;

9                    c)     dicing through said coil to provide a plurality of short coils,  
10                                wherein each said short coil has at least one said opening in said  
11                                insulation;

12                    d)     providing a substrate;

13                    e)     surface mounting said coil to said substrate;

14                    f)     mounting additional electronics on said substrate;

15                    g)     connecting said additional electronics to said coil; and

16                    h)     providing a housing for holding said coil, said substrate, and said  
17                                additional electronics.

1 103. (Previously amended) A method of fabricating an electronic device, comprising  
2 in order, the steps of:

3 a) providing a coil of conductor, an insulation, and a tube, said coil of  
4 conductor having a coil outer surface, said insulation on said coil  
5 outer surface, wherein said tube has a tube outer surface and  
6 wherein said coil of conductor and said insulation are on said tube  
7 outer surface;

8 b) forming openings in portions of said insulation on said coil outer  
9 surface and exposing conductor of said coil for contacts;

10 c) dicing through said coil to provide a plurality of short coils,  
11 wherein each said short coil has at least one said opening in said  
12 insulation; and

13 d) providing a movable core within said tube for adjusting inductance  
14 of said coil.